



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,523	08/25/2003	Naiyong Jing	56210US004	2281

32692 7590 03/03/2006

3M INNOVATIVE PROPERTIES COMPANY  
PO BOX 33427  
ST. PAUL, MN 55133-3427

EXAMINER

ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
----------	--------------

1773

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/647,523

Applicant(s)

JING ET AL.

Examiner

Ramsey Zacharia

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-13,15,17 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-13,15,17 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 December 2005 has been entered.

#### ***Claim Rejections - 35 USC § 102***

3. Claims 3, 6, 12, 13, 15, 17, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishii et al. (U.S. Patent 5,320,789).

Nishii et al. teach a fluorine resin containing a light absorbing material and a heat-resistant light absorbing polymeric material that may be laminated to various metal or polymeric materials (column 1, lines 10-25). The fluorine resin may be perfluorinated (e.g. PTFE, PFA, or FEP) or partially fluorinated (e.g. ETFE, ECTFE, or PVDF) (column 2, line 53-column 3, lines 3). The heat-resistant light absorbing polymeric material may be a polyphenylene sulfide (i.e. a thioether containing compound) or a polyamide (i.e. an amine containing compound) (column 3, lines 4-17). That is, because the heat-resistant light absorbing polymeric material comprises a

Art Unit: 1773

thioether or amine compound, it should inherently behave as an electron donor. A preferred light absorbed by the light absorbing materials is ultraviolet light having a wavelength of not more than 400 nm (column 3, lines 55-63). Upon exposure to the light, the absorbed energy causes the release of fluorine atoms from the fluorine resin (column 4, lines 38-58). The release of a fluorine atom from the fluorine resin will cause the formation of a free radical.

***Claim Rejections - 35 USC § 102 / 103***

4. Claim 7 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishii et al. (U.S. Patent 5,320,789).

Nishii et al. teach all the limitations of claim 7, as outlined above, except for the use of a primary amine as the heat-resistant light absorbing polymeric material. However, Nishii et al. do teach the use of a polyamide. Polyamides are formed through the condensation reaction of either:

diacid + diamine

( i.e.  $\text{HOOC-R-COOH} + \text{H}_2\text{N-R}'\text{-NH}_2 \Rightarrow \text{HOOC-}[\text{-R-CO-NH-R}'\text{-}]\text{-NH}_2$  )

or

aminoacids

( i.e.  $2n \text{ HOOC-R-NH}_2 \Rightarrow \text{HOOC-}[\text{-R-CO-NH-R-}]_n\text{-NH}_2$  )

In either case, one of the end groups of the resulting polyamide would be expected to be a primary amine. Alternatively, it would be obvious to one skilled in the art to use a polyamide

Art Unit: 1773

having a primary amine end group based on Nishii et al. teaching that the entire class of polyamides are functionally equivalent as the heat-resistant light absorbing polymeric material.

***Claim Rejections - 35 USC § 103***

5. Claims 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishii et al. (U.S. Patent 5,320,789) in view of Saeva et al. (U.S. Patent 5,141,969).

Nishii et al. teach all the limitations of claims 2, 4, and 5, as outlined above, except for the use of an ammonium or phosphonium compound as the light absorbing material. However, the only limitation that Nishii et al. place on the light absorbing material is that it be capable of absorbing light of the ultraviolet to visible region (column 3, lines 18-21).

Saeva et al. disclose ammonium and phosphonium salts that are light absorbing (column 1, lines 45-63). The salts can be tailored to match the desired exposing radiation (column 1, lines 34-44).

It would be obvious to one skilled in the art to use any known light absorbing compound as the light absorbing material of Nishii et al., including those taught by Saeva et al., because the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination. See MPEP 2144.07. Moreover, the salts of Saeva et al. provide an added benefit since they may be selected to match the exposing radiation.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishii et al. (U.S. Patent 5,320,789) in view of Berger (U.S. Patent 4,151,154).

Art Unit: 1773

Nishii et al. teach all the limitations of claim 11, as outlined above, except for the inclusion of a vinyl silane in the fluorine resin composition. Nishii et al. do teach that the composition may include a glass fiber additive.

Berger disclose that it is known to treat inorganic additives, such as glass fibers, with silane coupling agents to increase the adhesion between the filler and the resin or plastic material to which the filler is added, with vinyl silane cited as an example of a silane coupling agent (column 2, lines 5-22).

One skilled in the art would be motivated to add a vinyl silane to the fluorine resin composition containing glass fibers to improve the adhesion of the fibers to the resin.

*Allowable Subject Matter*

7. Claims 8-10 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter.

Claims 8-10 are directed to the article of claim 21 wherein the electron donor is an alkylamine (claims 8 and 9) or an amino-substituted organosilane having a hydrolyzable substituent.

Nishii et al. ('789) represents the closest prior art. However, the heat-resistant light absorbing material of Nishii et al. is a polymeric material, and there is nothing in Nishii et al. to teach or fairly suggest the use of a non-polymeric material such as an alkylamine or an amino-substituted organosilane having a hydrolyzable substituent.

Art Unit: 1773

***Response to Arguments***

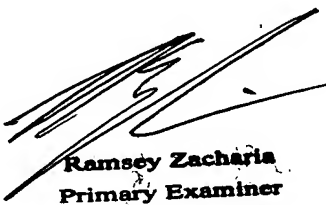
9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached at (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Ramsey Zacharia**  
Primary Examiner  
Tech Center 1700